

METHOD FOR OPTICAL PUMPING OF THIN LASER MEDIA AT HIGH
AVERAGE POWER

ABSTRACT OF THE DISCLOSURE

A thin, planar laser material is bonded to a light guide of an index-matched material forming a composite disk. Diode array or other pump light is introduced into the composite disk through the edges of the disk. Pump light trapped within the composite disk depletes as it multi-passes the laser medium before reaching an opposing edge of the disk. The resulting compound optical structure efficiently delivers concentrated pump light and to a laser medium of minimum thickness. The external face of the laser medium is used for cooling. A high performance cooler attached to the external face of the laser medium rejects heat. Laser beam extraction is parallel to the heat flux to minimize optical distortions.